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## Science Mission Directorate Solar System Division

# Archiving Data with the Planetary Data System

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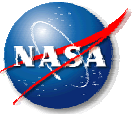
# Discovery Pre-Proposal Conference

## Archiving Data with the Planetary Data System

### Topics

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- Science Data Management Policies
- Overview of Planetary Data System
- Planetary Data System Organization
- Planetary Data System Services
- Considerations for Proposers



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## Archiving Data with the Planetary Data System

### Science Data Management Policies

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- **Key Objectives**
  - Preserve and utilize space science data as a National resource
  - “Open” Data: data ultimately belongs to science community and public
  - Appropriate and balanced allocation of resources for data issues through mission life cycle
- **Requirements**
  - Projects develop a Project Data Management Plan in coordination with the PDS Science Discipline Node(s)
  - **Timely** delivery of science data products to archives for open availability
  - Data Analysis Programs (DAPs) must utilize data residing in the PDS



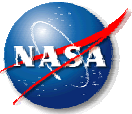
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## Archiving Data with the Planetary Data System

### Overview of the Planetary Data System

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- PDS is the official planetary science data archive for the NASA Science Mission Directorate's Solar System Division
- PDS is chartered to ensure that planetary data are archived and available to the scientific community
- PDS is a distributed system designed to optimize scientific oversight in the archiving process
- The PDS has been in existence in its present form for ~14 years
  - evolved from an offline media archive to a distributed online system, and still evolving...



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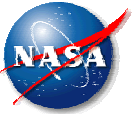
## Archiving Data with the Planetary Data System

### Planetary Data System Organization

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PDS is a close federation of Nodes with both **Science** and **Support** functions

- Science functions are organized by discipline and include:
  - data ingestion
  - data distribution
  - interfacing with data suppliers and users to ensure that:
    - maximum science value is captured within the archive
    - the archive is of greatest utility to both immediate and long-term science users
  - Immediate users, by their use of the system, help PDS understand if the services and data sets are of optimal use to the community. These users have the benefit of an active instrument team to whom comments and replies can be passed, if needed, allowing the archive to be modified.
  - Long-term users need final, stand-alone archives because the instrument experts may no longer be available.



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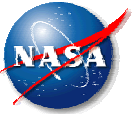
## Archiving Data with the Planetary Data System

### Planetary Data System Organization

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**PDS is a close federation of Nodes with both **Science** and **Support** functions**

- Support functions include basic development and cross-discipline support such as
  - common tools, libraries, procedures, and standards for data preparation, submission, and management
  - common tools for data manipulation
  - an infrastructure that facilitates
    - easy navigation within and access to holdings throughout the federation
    - simple system-wide maintenance and upgrades
- The Engineering Node focuses primarily on Support; the other Nodes focus primarily on Science, but all have at least test bed and review tasks



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## Archiving Data with the Planetary Data System

### Planetary Data System Organization

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- **Management Node (GSFC)** - Provides Program Management, budget support – *Ed Grayzeck*
- **Science Discipline Nodes** - Discipline Scientists provide expertise to interface with Flight Program Scientists. Science Discipline Nodes are:
  - Atmospheres (NMSU) – *Reta Beebe*
  - Geosciences (Washington U) – *Ray Arvidson*
  - Imaging (USGS Flagstaff/JPL) – *Lisa Gaddis*
  - Planetary Plasma Interactions (UCLA) – *Ray Walker*
  - Rings (NASA Ames) – *Mark Showalter*
  - Small Bodies (U of Maryland) – *Mike A'Hearn*
- **Support Nodes** – Provide support services to Science Discipline Nodes and/or the Science Community
  - Engineering Node (JPL) – *Dan Crichton*
  - Navigation Ancillary Information Facility (JPL) – *Chuck Acton*



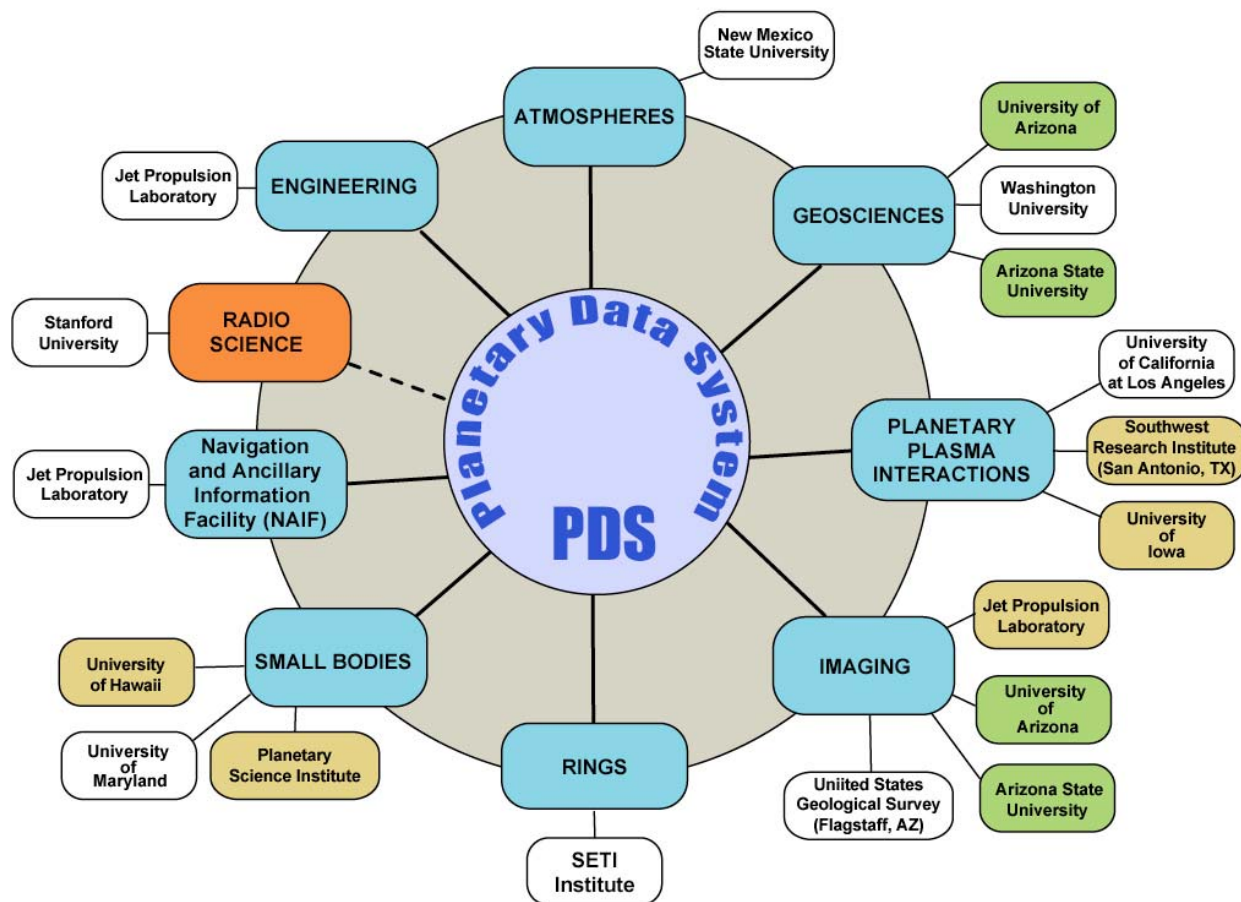
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## Archiving Data with the Planetary Data System

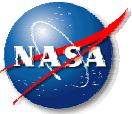
### Planetary Data System Organization

#### NODES/SUBNODES/DATA NODES

Function







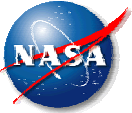
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## Archiving Data with the Planetary Data System

### Planetary Data System Services

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- PDS establishes and maintains standards for high quality data archives
- PDS works with missions to create complete data sets (calibrations, documentation, metadata)
  - PDS develops and maintains a suite of tools to help data producers create and validate archive-quality data products
  - PDS personnel can be funded by the mission to perform mission archiving tasks
- PDS provides expert assistance to the scientists who use the archives
- PDS ensures the viability of planetary data that might otherwise be lost



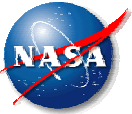
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## Archiving Data with the Planetary Data System

### Considerations for Proposers

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- *Early* involvement/interface with PDS is necessary and critical to satisfy the required product delivery/pipeline
- Lead PDS Discipline Node scientists guide/establish use of PDS standards and formats by Projects for each data set
- Data providers should strive for delivery of higher order, usable data products to the PDS
- Delivery of data to PDS must occur within six months of collection, allowing for an exclusive use period by Project PI's
  - Future goal is to make Project Ground Data System/Science Data System completely PDS compliant
- Archiving with PDS is a requirement, not an option...
  - Past performance with the PDS is a criteria in Phase B downselections



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## Archiving Data with the Planetary Data System

### Considerations for Proposers (continued)

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- PDS continues to evolve. Check back for updates → <http://pds.nasa.gov>
- Proposers Archive Guide (PAG) provided to assist in archive costing and interfacing with the PDS → <http://pds.nasa.gov/documents/pag/pag.pdf>
- Cost Model available for estimates (under Documents)
- Latest standards, formats and sample archive plans also available
- Please contact PDS representatives if you have any questions